Counter Terrorism

Mapping the Vulnerabilities, Supporting the Systems

NISAC Models Infrastructure at Risk

National security and the quality of life in the United States rely on the continuous, reliable operation of a complex set of interdependent infrastructures consisting of electric power, oil and gas, transportation, water, communications, banking and finance, emergency services, law enforcement, government continuity, agriculture, health services and others. Disruptions in any one of them could jeopardize the continued operation of the entire infrastructure system.

Many of these systems are known to be vulnerable to physical and cyber threats, and to failures induced by system complexity.

Our Solutions

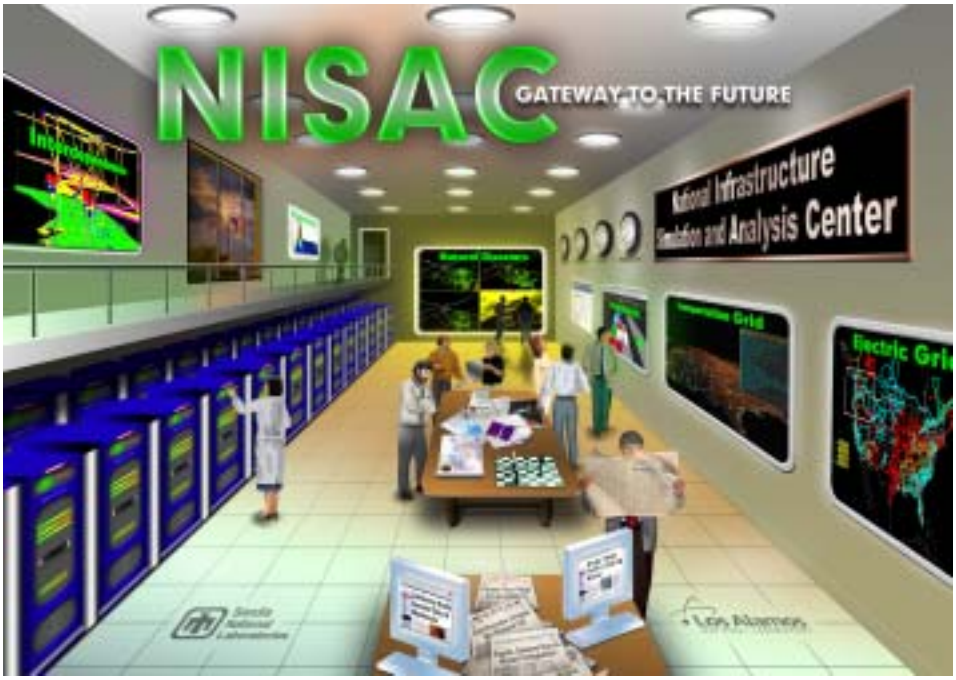
The National Infrastructure Simulation and Analysis Center (NISAC) provides a powerful new decision-support system to government and industry decision makers in the areas of infrastructure policy, education, planning, investment and crisis response.

NISAC's seminal contribution to homeland security is to use the nation's largest scientific computational capabilities to discover previously unknown relationships and develop insights about infrastructure vulnerabilities to feasibleterrorist threats.

Realizing that all US assets cannot be protected perfectly, this system will enable senior leaders to quantify uncertainties, set priorities and develop a phased, methodical approach to protecting infrastructures and recovering from disruptions.

Computing Strength Bolsters Analysis

In partnership, Los Alamos National Laboratory and Sandia National Laboratories are leveraging existing research and development activities to establish NISAC. It utilizes the most sophisticated simulation technology in the world. This technology is based on a $150 million investment in software that is supported by the world's largest secure, scientific computing environment. In the absence of the type, scale and comprehensive nature of information that NISAC will provide, the nation's senior leadership is at risk of reacting to the latest threat scenarios rather than proactively denying terrorists attack options against potentially high-value targets. NISAC can provide essential support to discover and overcome gaps in our homeland security.



The National Infrastructure Simulation and Analysis Center provides a powerful decision-support system.

Capabilities

- **Infrastructure interdependency assessments** — Our nation's vast expanse, large population and coupled interdependent infrastructures make it impossible to protect every point and every citizen on a continuous basis. It is essential that we identify our most critical and vulnerable infrastructure assets, as measured by both immediate and latent loss of life and disruption/destruction leading to severe economic consequences.

  The unique nature of NISAC is its capability to predict and measure interdependent consequences of different attack scenarios with accuracy and detail across the breadth of the national infrastructure.
- **Biosurveillance and bio early warning** — An immediate focus of NISAC is weapons of mass destruction, specifically terrorism using biological agents. NISAC's simulation capability can evaluate alternative response and mitigation strategies such as evacuation, quarantine, stockpiling vaccines, etc., and their relative effectiveness and unintended consequences.

Since 1943, Los Alamos has created and applied advanced science and technology to solve critical challenges in national defense and civilian research.

NISAC Can Address Immediate National Needs

- **Bioterrorism in large metropolitan areas** — Simulate event to develop plans for evacuation, quarantine, antidote stockpiles, sensors, business and/or school closures, etc. Assess options and alternatives.
- **Major metropolitan/national transportation system simulation** — Simulate major disruption to assess and design evacuation routes, "effective quarantine (e.g. gridlock) strategies, emergency personnel (police, fire, health, etc.) ingress/egress routes
- **War-gaming national security infrastructure attacks** — Interagency planning and rehearsal via simulation, identify first-responder needs such as tools, databases, stockpiles, etc., and perform threat assessment
- I**nfrastructure Interdependency** — Discovery of unintended consequences or unknown relationships, propagation and escalation of minor initiating events between energy, communication and water infrastructures
- **Early indications warning system** — Provide immediate information to first responders and attack mitigation assistance.
- **Economic consequence analysis** — Simulate economic impacts of attacks or disruptions and provide cross-infrastructure cascading effects evaluations

Los Alamos NATIONAL LABORATORY

Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy's National Nuclear Security Administration

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